US-PAT-NO: 5146227

DOCUMENT-IDENTIFIER: US 5146227 A

TITLE: Sweeping receiver

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Detailed Description Text - DETX (8):

The output signal of the heterodyne front end 110 is the input signal to an intermediate frequency filter-amplifier 114. The intermediate frequency filter-amplifier 114 has a narrow bandpass compared to the frequency of the radio-frequency signal received. The intermediate frequency filter-amplifier 114 includes a bandpass filter 140 and an amplifier 142. Although depicted with a single amplifier 142, the intermediate frequency filter-amplifier 114 is typically constructed as a series of filters and amplifiers to produce a sufficiently high gain to drive the detection stage. In the embodiment herein described, an alternating series of three amplifiers and four LC filters are

used to produce a 60 dB gain. The intermediate frequency filter-amplifier 114 is typically fixed, that is, non-tunable. In the present embodiment, the filter passes a central intermediate frequency of 385.5 MHz. It is the ability to tune the voltage controlled local oscillator 126 of the heterodyne front end 110 which permits the intermediate frequency filter-amplifier 114 to be optimized to pass a single band of intermediate frequencies regardless of the frequency of the radio-frequency signals received by the horn antenna 120. The relatively high intermediate frequency (IF) in the single conversion embodiment is preferred because of the absence of image frequencies caused by subsequent conversions. It should be noted however, that although the embodiment disclosed herein utilizes a single conversion receiver, the use of a multiple conversion receiver is also contemplated.